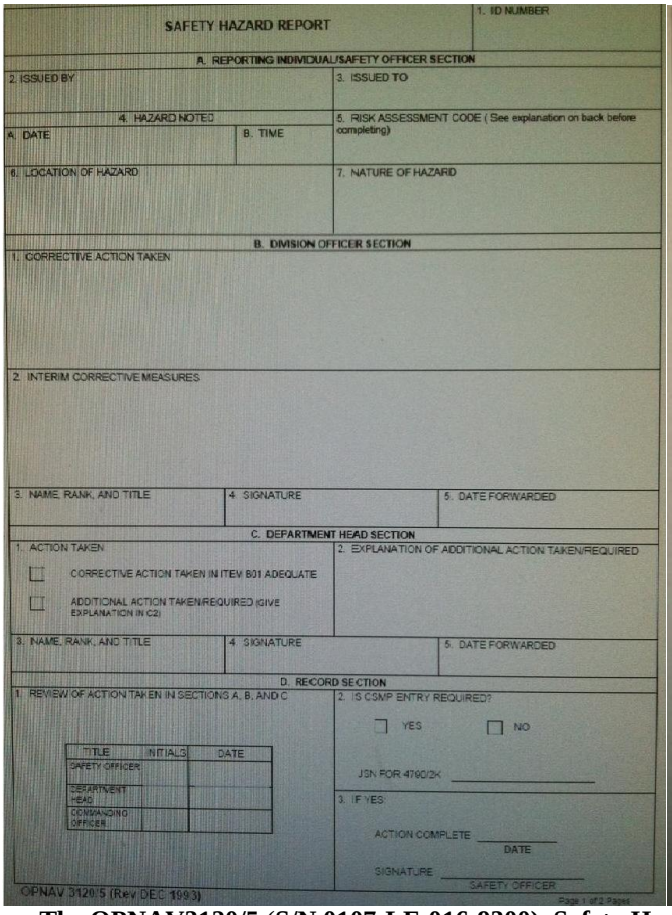
FLASH

Factual Lines About Submarine Hazards

Submarine Division of the Naval Safety Center

October – December 2012



SAFETY HAZARD REPORT

1. ID NUMBER

A. REPORTING INDIVIDUAL/SAFETY OFFICER SECTION

2. ISSUED BY

3. ISSUED TO

4. HAZARD NOTED

A. DATE

B. TIME

5. RISK ASSESSMENT CODE (See explanation on back before completing)

6. LOCATION OF HAZARD

7. NATURE OF HAZARD

B. DIVISION OFFICER SECTION

1. CORRECTIVE ACTION TAKEN

2. INTERIM CORRECTIVE MEASURES

3. NAME, RANK, AND TITLE

4. SIGNATURE

5. DATE FORWARDED

C. DEPARTMENT HEAD SECTION

1. ACTION TAKEN

CORRECTIVE ACTION TAKEN IN ITEM B01 ADEQUATE

ADDITIONAL ACTION TAKEN/REQUIRED (GIVE EXPLANATION IN C2)

2. EXPLANATION OF ADDITIONAL ACTION TAKEN/REQUIRED

3. NAME, RANK, AND TITLE

4. SIGNATURE

5. DATE FORWARDED

D. RECORD SECTION

1. REVIEW OF ACTION TAKEN IN SECTIONS A, B, AND C

TITLE	INITIALS	DATE
SAFETY OFFICER		
DEPARTMENT HEAD		
COMMANDING OFFICER		

2. IS CSMP ENTRY REQUIRED?

YES NO

JSN POR 4790/2K

3. IF YES:

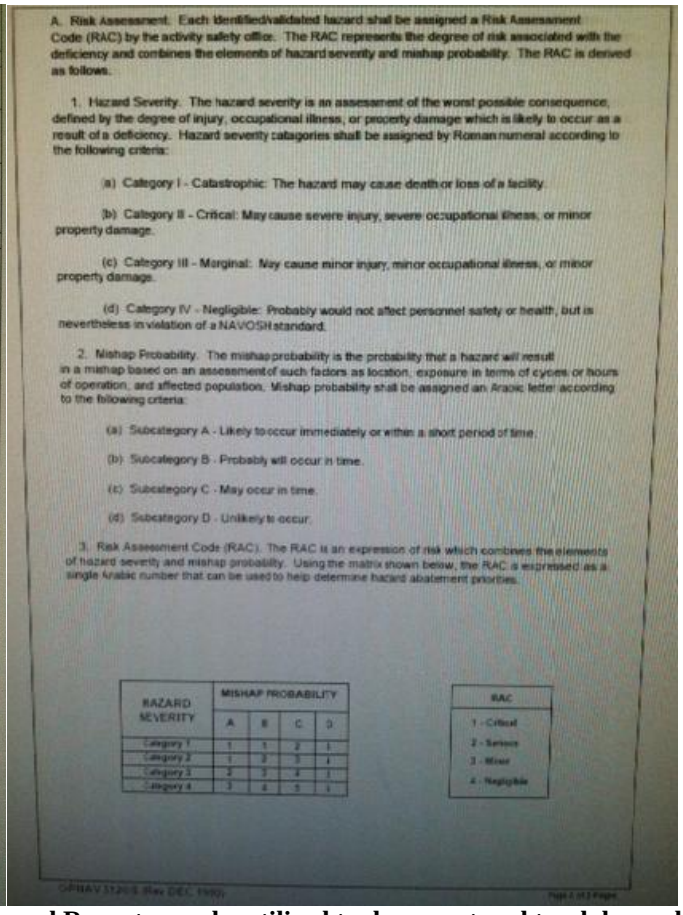
ACTION COMPLETE

DATE

SIGNATURE

SAFETY OFFICER

OPNAV 3120/5 (Rev DEC 1993)



A. Risk Assessment. Each identified/validated hazard shall be assigned a Risk Assessment Code (RAC) by the activity safety office. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows.

1. Hazard Severity. The hazard severity is an assessment of the worst possible consequence, defined by the degree of injury, occupational illness, or property damage which is likely to occur as a result of a deficiency. Hazard severity catagories shall be assigned by Roman numeral according to the following criteria:

(a) Category I - Catastrophic: The hazard may cause death or loss of a facility.

(b) Category II - Critical: May cause severe injury, severe occupational illness, or minor property damage.

(c) Category III - Marginal: May cause minor injury, minor occupational illness, or minor property damage.

(d) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of a NAVOSH standard.

2. Mishap Probability. The mishap probability is the probability that a hazard will result in a mishap based on an assessement of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

(a) Subcategory A - Likely to occur immediately or within a short period of time.

(b) Subcategory B - Probably will occur in time.

(c) Subcategory C - May occur in time.

(d) Subcategory D - Unlikely to occur.

3. Risk Assessment Code (RAC). The RAC is an expression of risk which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine hazard abatement priorities.

HAZARD SEVERITY	MISHAP PROBABILITY			
	A	B	C	D
Category I	1	1	2	3
Category II	1	2	3	4
Category III	2	3	4	5
Category IV	3	4	5	5

RAC
1 - Critical
2 - Serious
3 - Minor
4 - Negligible

The OPNAV3120/5 (S/N 0107-LF-016-9300), Safety Hazard Report, may be utilized to document and track hazards.

Route for Safety's Sake

CO ____ XO ____ NAV ____ ENG ____ CSO ____ SUPPO ____ COB ____ DCA ____ Safety Officer ____

EDMC ____ MDR ____ 3MC ____ CPO Quarters ____ Ship's DCPO ____ 1st LT ____

We at the Naval Safety Center look forward to your questions and feedback.

In the spirit of "**ASK THE FLASH,**" we have opened the FLASH up for write-in articles and cartoons. You can find the Naval Safety Center classified web page at https://www.csp.navy.smil.mil/NSC-SUB and the Naval Safety Center videos on You Tube at http://www.youtube.com/user/dsteber1849

Warnings, Cautions and Notes

The Flash is a newsletter that provides safety-related information to the fleet. This information is a summary of research from selected mishaps and surveys done throughout the force. The data is provided to assist you in **your** mishap prevention program and give advance notice of other safety-related information.

This newsletter is NOT authoritative.

This issue of the FLASH covers the FY 2012 submarine safety survey findings focusing on the significant and most common discrepancies. The most common theme in most survey areas is PMS not being properly accomplished by submarine personnel and verified by leadership.

SAFETY OFFICER
LT Ray

Welcome to 2013. I wish everyone a mishap free and happy new year. Yes, that is achievable. If you would like our recommended corrective actions or best practices, please contact LT Ray at richard.d.ray1@navy.mil.

Safety Officers. 70% of units surveyed had designated safety officers that had not attended the Submarine Safety Officer course, or in the interim, had completed the Safety Supervisor's correspondence course (NAVEDTRA 14167F).

Hazard Reports Tracking. 68% of units surveyed had no means to track safety hazard reports of on the spot corrections for identification of similar hazards and trends.

Hazard Documentation. 64% of units surveyed did not retain or maintain documentation of hazards identified through inspections, surveys, or as reported by individuals. Documentation should contain at a minimum: (1) Date, time, location, and description of hazard; (2) Risk assessment codes assigned by the safety officer; (3) Recommended corrective action to control or eliminate hazard; (4) Action taken to implement that correction; (5) Verification and date hazard corrected/eliminated.

Safety Mishap Reports. 56% of units surveyed did not have a complete file of all safety mishap reports for the past five years.

ORM Assistants. 54% of units surveyed did not have at least one officer and one senior enlisted person for designation as ORM assistants that were qualified in the fundamentals of ORM and had completed the executive overview e-learning courses.

GENERAL DEPARTMENT

Flood Control Doors. 96% of units surveyed had flood control doors that did not lock when their latches were released (not applicable to SSBN 726 Class).

Unauthorized Bedding. 75% of units surveyed had blankets and pillows used in berthing that were not approved by NAVSEA/TYCOM.

Gaskets. 60% of units surveyed had gaskets on flood control and the maneuvering doors that were not in good condition (clean of dirt, debris, and paint).

Photo Luminescent. 50% of units surveyed had DC lockers and equipment that were not properly marked with appropriate photo luminescent identifier (SCBA, Damage Control Locker, EAB, CO_2, AFFF, PKP, Fire Hose). 46% of units surveyed also did not have inclined ladders with 2" photo luminescent strips on the dust shields at the top and bottom steps or vertical ladders marked with a 10" long x 2" wide strips on the flat face of each rung.

Safety Chains. 46% of units surveyed had safety chains/guardrails not properly being used or were covered with material that prevented inspection (i.e., plastisol or powder coating).

WESS Afloat Module Now Named AMHRS
LT Seaward

If you have served in a safety billet, you probably have probably heard or voiced comments similar to those listed below:
"The Web Enabled Safety System (WESS) is not user friendly." "It takes too long to enter a mishap into WESS." "I'm too busy with my primary duties to spend hours entering a WESS mishap report." "Why are they asking for height, number of dependents and other useless information?"
During the first quarter of calendar year 2013, the Naval Safety Center will be introducing the Afloat Mishap & Hazard Reporting System (AMHRS). AMHRS has been designed to be used by ships with limited bandwidth. Approximately 50% of data fields have been eliminated and only data mandated by the Office of the Secretary of Defense or data that is frequently requested by the fleet or senior leadership has been included. With this reduction in data entry the number of web pages to complete an afloat report has dropped from about 70 pages to 13 or fewer pages.

Other improvements include:
-By using the browser caching memory on your computer, the loading times for data entry pages have been reduced dramatically. Safety officers will need to open up AMHRS prior to heading out to sea to ensure that the most up to date version has been loaded onto their computers cache. After log-in, the initial load of the module may still take several minutes. Many customers will be able to navigate from page to page with only a few seconds delay.

-Mishap causal factors have been completely overhauled. AMHRS uses the DoD Human Factors and Analysis Classification System (HFACS), an enhanced method of analyzing, tracking and trending the human element in mishaps.

-Instead of making them all fit in a single narrative block, AMHRS now contains separate areas for event description, cause factor narratives and recommendations.

-As the Equipment Identification Code (EIC) provides a consistent, reliable method of tracking specific property that has been involved in a mishap, property will be submitted using the involved property's EIC as opposed to using a type-in field.

-AMHRS will provide three permission levels for additional command oversight of mishap reporting. Customers with draft permissions may enter a report in the system but cannot submit it to NSC. Customers with release permissions may enter and submit reports. Customers with notification permissions may receive redacted copies of mishap reports submitted by other afloat commands.

ELECTRICAL/MECHANICAL
EMCM(SW/AW) Valdepeña

There has been a reduction in the number of **repeat**, top five, significant deficiencies, specifically in the mechanical area. Keep charging and let's bring the number of repeats down to zero. However, we are concerned that 60% of the electrical/electronic and 80% of the mechanical top 5 discrepancies are PMS related. Ensure PMS is being accomplished verbatim. If the card can't be completed as written, submit a technical feedback report. If you don't fully understand what a step means, don't guess. Ask questions!

Submarine Electrical/Electronic: FY2011 repeat significant discrepancy. 82% of units surveyed had shock hazards on the ship's garbage grinder.

Best Practice- Complete COMSUBPAC/COMSUBLANT A&I 3399, ensure vibration switch mounting bracket is welded to the grinder, this is to ensure that both the switch and grinder are properly grounded. Also ensure that any spare or new motor that is ordered has the A&I installed prior to use.

Submarine Electrical/Electronic: FY2011 repeat significant discrepancy. 70% of units surveyed had portable electrical equipment, either government or personally owned (including ships entertainment components, coffee pots, portable extension lights, etc.), that were not being electrically safety checked in accordance with PMS.

Best Practice- Complete verbatim maintenance IAW MIP 3000/029 and follow the guidance of NSTM 300 paragraph 300-2.7.5 and OPNAVINST 5100.19E, B0702e(2). Utilize safety tag: NSN 0116-LF-985-4300. Ensure EGL/LGLs are utilized and correct PMS is being completed for fixed equipment (R-3) and mobile equipment (R-4).

Submarine Electrical/Electronic: FY2011 repeat significant discrepancy. 60% of units surveyed had submersible pumps that were not properly electrically safety checked, were not properly grounded, or the cables & connections were in bad repair.

Best Practice- Complete verbatim maintenance IAW MIP 3000/029. Portable pumps require the Q-1R and permanently mounted pumps require the S-1R MRCs to be accomplished.

Submarine Electrical/Electronic significant discrepancy: 52% of units surveyed had electrical or electronic shock hazards associated with personal bunk lighting.

Best Practice- Follow the guidance in COMSUBFORINST 5400.38/39/48 Article 4309 and OPNAVINST 5100.19 D0503. Ensure plastic and Surelite fluorescent lamp light starters [cage 07329] are not being utilized.

Submarine Electrical/Electronic: 46% of units surveyed had unauthorized multi-outlet power strips in use.

Best Practice- Ensure only power strips listed in NSTM 300 paragraph 300-2.7.3.5 are being utilized. Complete verbatim maintenance IAW MIP 3000/029 A-11R.

MECHANICAL

Submarine Mechanical: FY2011 repeat significant discrepancy. 90% of units surveyed did not have a pneumatic grease gun configured IAW PMS and the technical manual.

Best Practice- Complete verbatim maintenance IAW MIP 5462/001 Q-1R; and follow the guidance of NAVSEA T6350-AA-HBK-010 Figure 2-1 (Submarine Greasing Handbook). With the most recent revision of the MRC, this maintenance can now be accomplished as written.

Submarine Mechanical: FY2011 repeat significant discrepancy. 70% of units surveyed did not have the point of operation guard (chip shield) installed on the drill press and/or lathe.

Best Practice- Point of operation guard (chip shield) is not available through the Navy supply system. The chip shield must be open purchased. REF: OPNAVINST 5100.19E paragraph D0804, Government Source – Rockford Systems, INC. Phone # 1-800-922-7533 or email - SALES@ROCKFORDSYSTEMS.COM

Submarine Mechanical: FY2011 repeat discrepancy. 64% of units surveyed did not have a complete portable oxyacetylene cutting apparatus.

Best Practice- Complete verbatim maintenance IAW MIP 6641/031 24M-3.

Submarine Mechanical: FY2011 repeat discrepancy. 46% of units surveyed had a trash compactor that had latches missing, excessively worn or broken, barrel not aligned, or non operational interlocks.

Best Practice- Complete verbatim maintenance IAW MIP 5394/9R1, 2, or3.

DAMAGE CONTROL
MMCS(SS) Sisk

FY 2012 has had its ups and down as far as damage control is concerned. I have seen positive trends on a majority of the submarines in the fleet, so keep up the good work. The following is a list of the five most seen significant discrepancies for FY 2012.

EAB's. 79% of units surveyed had EABs with torn or soiled anti-flash gloves and flash hoods. MIP 5519/600 MRC Q-1 and R-1 require an inspection of these components quarterly and after every use. If you see any fraying, holes or tears, replace the components. If you have dirty gloves or flash hoods, it is acceptable to machine wash in lukewarm water and detergent (NSN 7930-00-634-0342) and then machine dry using a low setting. EABs are for everyone's safety when atmospheres require use so everyone should be looking at this gear, not just Auxiliary Division. Another issue is the cleanliness of the EABs. All EABs are required to be cleaned at least every quarter, so create a cleaning plan and incorporate the crew to achieve this plan so that all EABs are ready when the need arises.

Damage Control Tool Rolls. 71% of units surveyed had tool rolls that did not contain all of the items listed on the MRC or the AEL, or the items were damaged or inoperable. MIP 6641/009 MRC A-5 and R-3 requires the tool rolls to be inventoried annually and after every use. This inventory is not a "here it is" inventory. Each tool needs to be verified as a working tool and the correct tool. The MRC has a complete list and description of the tools and should be the primary method for inventory. All of the damage control bags are designed to be used for casualty situations and should not be used during drill scenarios. Drill bags should be developed for use and kept by the drill team so these bags can be preserved for actual casualties.

CO_2 Extinguishers. 71% of units surveyed had unauthorized CO_2 horns. There are only two authorized and MIP 6641/101 MRC Q-2 shows both types: APL 649990064, NSN 4210-01-377-7828 (New Type) and APL 640140005, NSN 5340-01-395-8763 (Old Type). If you are ordering horns and you still get the wrong type, verify you are using one of these two APL's. If not, work with supply to get the right APL loaded. The second biggest issue I continually find is the scale being used to weigh the CO_2 bottle. The MRC, 24M-1, lists one scale, which is the 0-99 lb digital scale, NSN 6670-01-579-3224. This scale is used for all extinguishers and it does not require calibration. Make sure you are using the correct scale, which is lbs and oz.

Steam Protective Ensembles. 69% of units surveyed did not have the training steam protective ensembles positively identified on the back with a large red "X" or the training steam protective ensemble was not stowed in a container/locker/bag with the door/top painted yellow and clearly labeled "FOR TRAINING PURPOSES ONLY". MIP 6641/103 MRC Q-1R requires a quarterly verification that the training steam protective ensembles meet this requirement. Inventory of the components is not required for the training steam protective ensembles. For units that do not have a yellow locker for stowage of the training steam protective ensemble (688 Class), it is acceptable to maintain the ensemble in a green flight bag with yellow reflective markings running from top to bottom and a label on top that has the "FOR TRAINING PURPOSES ONLY". The local IMAs should be able to assist in meeting these requirements.

NFTI's. 68% of units surveyed had NFTI battery packs that were not fully charged. MIP 6641/001 MRC S-2R requires a semiannual inspection of the batteries and an after each use inspection. If you cannot keep your batteries charged, order new batteries, AEL 99A020090, NSN 6140-01-502-2053 (Rechargeable); NSN 6130-01-502-2056 (AA Adapter). Also, you are required to have two rechargeable batteries and one AA battery pack with each Talisman along with five red, non-expired chemical lights.

If you have any questions about these items or ideas of items to submit at the next conference, feel free to call or email me using the contact information listed in the FLASH.

DECK/COMBAT SYSTEMS
ETC(SS) Dawson

MK 1 Commercial Life Jackets. 92% of units surveyed had MK 1 commercial life jackets that would not pass PMS (MRC 5832/014 Q-1 was not being satisfactorily performed on all).

Cranial Helmets. 82% of units surveyed had cranial helmets with reflective tape that was incorrectly applied to them (MRC 5940/004 U-1).

Inflatable SAR Vests. 78% of units surveyed had inflatable SAR vests (LPU-28A/P) that would not pass PMS (MRC 5832/022 A-1).

Safety and Working Lanyards. 76% of units surveyed had unauthorized safety and working lanyards onboard (working lanyard NSN is 4240-00-022-2518 and safety lanyard NSN is 4240-00-022-2521).

Crash Bags. 74% of units surveyed had incomplete crash bags.

COMBAT SYSTEMS

Security Gear. 66% of units surveyed did not maintain all required physical security gear.

Otto Fuel Detectors. 48% of units surveyed had MK 15 Otto fuel detectors that were not calibrated, was not currently electrical safety checked, or had expired Otto fuel detector tubes.

Precautions Signs. 44% of units surveyed did not have all of the proper and legible safety precautions posted at all required locations.

Otto Fuel Spill Kit. 44% of units surveyed did not have a complete Otto fuel spill kit available in the torpedo room per MRC.

Secondary Otto Fuel Spill Kit. 42% of units surveyed did not have a complete Otto fuel spill kit available outside of the torpedo room per MRC.

HAZMAT/MEDICAL
HMC(SS) Harris

Oil Pollution Abatement Signs. 55% of units surveyed had oil pollution abatement signs that were not conspicuously posted or were outdated (note: locations as determined by NAVSEA 08 requiring posting are the trim & drain pump control panels and the ballast control panel).

Hazardous Materials Labels. 44% of units surveyed had secondary containers of flammables and/or hazardous materials not appropriately labeled as to their hazards.

Afloat Environmental Protection Coordinator. 40% of units surveyed did not have a designated Afloat Environmental Protection Coordinator (AEPC) that had completed the AEPC course (A-4J-0021) within 6 months of assignment.

Atmosphere Contaminant Logs. 38% of units surveyed had Atmosphere Contaminant Logs without all appropriate entries completed per the *Nuclear Powered Submarine Atmosphere Control Manual*.

Spill Contingency Plan. 30% of units surveyed did not have a current Spill Contingency Plan.

MEDICAL

Potable Water System Painting. 58% of units surveyed did not have potable water hose ends, couplings, wrenches, and/or water riser caps painted dark blue.

Dry Bulb Thermometers. 52% of units surveyed did not have NAVSEA approved hanging dry bulb thermometers (NSN 6685-00243-9964) permanently mounted at all key watch and work stations where heat stress conditions may exist.

Vacuum Breaker. 36% of units surveyed did not have all potable water hose temporary connections equipped with a vacuum breaker (back flow preventer NSN: 4820-00-164-3377).

Temporary Hose Connections. 36% of units surveyed did not have all potable water temporary hose connections marked with one-inch high red letters caution signs reading "DISCONNECT HOSE WHEN NOT IN USE".

Noise Posting. 28% units surveyed did not have all equipment which have noise levels of 84 dba or greater (continuous/intermittent), or 140 dba (impact/impulse) posted with signs or warning tags.

Naval Safety Center Submarine Division
Travel Schedule 2nd QTR FY13

19 – 23 Feb: Groton CT 19 - 22 Mar: Bangor, WA 25-28 Mar: San Diego, CA

Commands needing submarine safety surveys scheduled during 2nd and 3rd QTR FY13:

USS ANNAPOLIS (SSN 760)
USS BOISE (SSN 764)
USS BUFFALO (SSN 715)
USS CALIFORNIA (SSN 781)
USS CHICAGO (SSN 721)
USS CONNECTICUT (SSN 22)
USS HARTFORD (SSN 768)
USS JEFFERSON CITY (SSN 759)
USS JIMMY CARTER (SSN 23)
USS KEY WEST (SSN 722)
USS LOUISIANA (SSBN 743)
USS MISSOURI (SSN 780)
USS NEVADA (SSBN 733)
USS NEW HAMPSHIRE (SSN 778)
USS NEW MEXICO (SSN 779)
USS NORFOLK (SSN 714)
USS OKLAHOMA CITY (SSN 723)
USS SAN JUAN (SSN 751)
USS SPRINGFIELD (SSN 761)
USS TOPEKA (SSN 754)
USS VIRGINIA (SSN 774)

1. "**'Fessing Up**"." When people hide, ignore or downplay mishaps, they're helping make other people learn the hard way. More information regarding reporting mishaps requirements is available at http://www.public.navy.mil/navsafecen/Documents/media/deckplate_dialogue/DD_Jan12_fessing_up.pdf

November 2012

To view the newest E Blast posting, visit:

https://www.public.portal.navy.mil/navsafecen/Documents/media/e-blast/E-Blast_Nov2012.pdf

2. The official Navy blog site called "*Navy Live*" can be viewed at http://navylive.dodlive.mil/.

3. The semi-annual publication for the surface, submarine, and dive communities is available on line at http://www.public.navy.mil/navsafecen/Pages/media/sea-compass/Index.aspx

Effective COMNAVSAFECEN Submarine Safety Advisories		
2010		
6-10	081904Z Dec 10	Asbestos Removal Protection
2011		
2-11	041532Z Mar 11	Heat Stress Meter Clarification
3-11	071634Z Mar 11	Heat Stress Survey Clarification
5-11	021648Z May 11	Reportable Mishap Clarification and Reporting
7-11	201437Z Oct 11	Safety Survey Requirement Change
9-11	181607Z Nov 11	Afloat Fall Protection
2012		
3-12	231505Z Aug 12	Reporting Afloat Mishaps
4-12	291342Z Aug 12	Replacement of HMUG with NSTM 670
2013		
1-13	081702Z Jan 13	Effective COMNAVSAFECEN Afloat Safety Advisories for Surface Ships and Submarines
2-13	101957Z Jan 13	Electrical Safety During PMS

Norfolk, Virginia 23511
Phone: 757-444-3520, ext. 7838
DSN: 564-3520, ext. 7838
Fax: 757-444-7205 (DSN 564)
SAFE-submarines@navy.mil
http://www.safetycenter.navy.mil/
https://www.csp.navy.smil.mil/NSC-SUB/

Commander Naval Safety Center
RADM K.J. Norton

Afloat Directorate Head
CDR McWhorter
rosario.mcwhorter@navy.mil

Afloat Executive Assistant
Mr. Ron Keim
ronald.keim@navy.mil

SUBMARINE DIVISION SURVEYORS

Safety Officer / General
LT Richard Ray
richard.d.ray1@navy.mil
richard.ray@navy.smil.mil

Submarine Advisor for Class "A" Safety Investigations
LT Christopher Seaward
christopher.seaward@navy.mil
christopher.seaward@navy.smil.mil

Electrical / Mechanical, Submarine Division LCPO
EMCM(SW/AW) Frank Valdepeña
frank.valdepena@navy.mil

Damage Control
MMCS(SS) Arthur Sisk
aurthur.sisk@navy.mil
author.sisk@navy.smil.mil

Deck / Combat Systems
ETC (SS) Kevin Dawson
kevin.d.dawson@navy.mil
kevin.dawson@navy.smil.mil

Medical / HAZMAT
HMC(SS) Chris Harris
christopher.l.harris@navy.mil